Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please cancel claim 1 without prejudice and add claims 27-49 as follows.

Listing of Claims:

Claims 1-26 (canceled)

Claim 27 (new): A computer implemented method for generating machine instructions including memory access monitoring instructions, said method comprising the steps of:

receiving as input a first set of machine instructions, said first set of machine instructions being specific to a computer processor with each machine instruction of said first set corresponding to an instruction executable by said computer processor, said first set of machine instructions including a memory access instruction; and

generating a second set of machine instructions from said first set of machine instructions having additional machine instructions that are memory monitoring instructions, said memory monitoring instructions checking a memory status of a memory location accessed by said memory access instruction in conjunction with execution of said memory access instruction, said memory status including an allocated state.

Claim 28 (new): The method of claim 27, further comprising the step of signaling an error if said memory status indicates said memory location is in an unallocated state.

Claim 29 (new): The method of claim 27, wherein said allocated state includes an allocated-and-uninitialized state and an allocated-and-initialized state.

Claim 30 (new): The method of claim 29, further comprising the step of signaling an error if said memory access instruction is a read operation and said memory status indicates said memory location is in an allocated-and-uninitialized state.

Claim 31 (new): The method of claim 27, further comprising the step of maintaining said memory status for said memory location.

Claim 32 (new): The method of claim 27, wherein said second set of machine instructions has additional memory monitoring instructions for substantially all memory access instructions that access a region of memory.

Claim 33 (new): The method of claim 27, wherein said first and second set of machine instructions are object code.

Claim 34 (new): A computer program product that generates machine instructions including memory access monitoring instructions, comprising:

computer code that receives as input a first set of machine instructions, said first set of machine instructions being specific to a computer processor with each machine instruction of said first set corresponding to an instruction executable by said computer processor, said first set of machine instructions including a memory access instruction;

computer code that generates a second set of machine instructions from said first set of machine instructions having additional machine instructions that are memory monitoring instructions, said memory monitoring instructions checking a memory status of a memory location accessed by said memory access instruction in conjunction with execution of said memory access instruction, said memory status including an allocated state; and

a computer readable medium that stores said computer codes.

Claim 35 (new): The computer program product of claim 34, wherein said computer readable medium is a computer memory.

Claim 36 (new): The computer program product of claim 34, further comprising computer code that signals an error is said memory status indicates said memory location is in an unallocated state.

Claim 37 (new): The computer program product of claim 34, wherein said allocated state includes an allocated-and-uninitialized state and an allocated-and-initialized state.

Claim 38 (new): The computer program product of claim 37, further comprising computer code that signals an error if said memory access instruction is a read operation and said memory status indicates said memory location is in an allocated-and-uninitialized state.

Claim 39 (new): The computer program product of claim 34, wherein said memory status is maintained for said memory location.

Claim 40 (new): The computer program product of claim 34, wherein said second set of machine instructions has additional memory monitoring instructions for substantially all memory access instructions that access a region of memory.

Claim 41 (new): The computer program product of claim 34, wherein said first and second set of machine instructions are object code.

Claim 42 (new): A computer system the generates machine instructions including memory access monitoring instructions, comprising:

a processor; and

a storage medium coupled to said processor, said storage medium storing computer code including:

computer code that receives as input a first set of machine instructions, said first set of machine instructions being specific to a computer processor with each machine instruction of said first set corresponding to an instruction executable by said computer processor, said first set of machine instructions including a memory access instruction; and

computer code that generates a second set of machine instructions from said first set of machine instructions having additional machine instructions that are memory monitoring instructions, said memory monitoring instructions checking a memory status of a memory location accessed by said memory access instruction in conjunction with execution of said memory access instruction, said memory status includes an allocated state.

Claim 43 (new): The computer system of claim 42, wherein said computer storage medium is a computer memory.

Claim 44 (new): The computer system of claim 42, further comprising computer code that signals an error if said memory status indicates said memory location is in an unallocated state.

Claim 45 (new): The computer system of claim 42, wherein said allocated state includes an allocated-and-uninitialized state and an allocated-and-initialized state.

Claim 46 (new): The computer system of claim 45, further comprising computer code that signals an error if said memory access instruction is a read operation and said memory status indicates said memory location is in an allocated-and-uninitialized state.

Claim 47 (new): The computer system of claim 42, wherein said memory status is maintained for said memory location.

Claim 48 (new): The computer system of claim 42, wherein said second set of machine instructions has additional memory monitoring instructions of substantially all memory access instructions that access a region of memory.

Claim 49 (new): The computer system of claim 42, wherein said first and second set of machine instructions are object code.